DB Name	Query	Hit Count	Set Name
USPT	((424/423)!.CCLS.) and (fibroblasts.clm) and (graft)	0	L20
USPT	((424/423)!.CCLS.) and (fibroblasts.clm) and (skin adj graft)	0	L19
USPT	l17 and ((no or without) near5 (matrix or scaffold))	30	L18
USPT	l16 and (graft)	89	L17
USPT	((424/422)!.CCLS.) and fibroblasts and skin	139	L16
USPT	l14 and ((transfect$ or transduce$) near3 fibroblasts)	6	L15
USPT	l11 and (platelet adj derived adj growth adj factor)	85	L14
USPT	l11 and (gene near10 PDGF)	20	L13
USPT	l11 and (vector near5 fibroblasts)	1	L12
USPT	((435/320.1)!.CCLS.) and (fibroblasts near10 PDGF)	96	L11
USPT	l8 and fibroblasts.clm. and keratinocytes.clm.	5	L10
USPT	fibroblasts.clm. and keratinocytes.clm.	90	L9
USPT	((435/373)!.CCLS.) and fibroblasts and keratinocytes	14	L8
USPT	l6 and fibroblasts.clm.	10	L7
USPT	((435/371)!.CCLS.) and (fibroblasts and skin adj graft)	25	L6
USPT	l3 and ((no or without) adj3 (extracellular adj matrix))	3	L5
USPT	l3 and ((no or without) adj3 (exogenous adj matrix))	0	L4
USPT	l1 and (skin or dermis)	147	L3
USPT	l1 and ((no or without) adj3 (extracellular adj matrix))	4	L2
USPT	((435/325)!.CCLS.) and fibroblasts and ((tissue adj engineering) or graft)	224	L1

(FILE 'HOME' ENTERED AT 19:07:00 ON 28 SEP 2000)

FILE 'MEDLINE, BIOSIS, CAPLUS' ENTERED AT 19:07:07 ON 28 SEP 2000

L1 2928 S (TRANSFECT? OR TRANSDUCE?)(3W) FIBROBLASTS
L2 50 S L1 AND (PLATELET DERIVED GROWTH FACTOR)
L3 20 DUPLICATE REMOVE L2 (30 DUPLICATES REMOVED)
L4 1 S L3 AND (TISSUE OR GRAFT)
L5 36 S (TISSUE ENGINEERING) AND (FIBROBLASTS) AND (SKIN OR EPIDERMIS
L6 1 S L5 AND (PDGF)
L7 26 DUPLICATE REMOVE L5 (10 DUPLICATES REMOVED)
L8 236 S (ANIMAL MODEL) AND (SKIN GRAFT)
L9 6 S L8 AND (ATHYMIC MICE)

L9 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1984:315414 BIOSIS
DN BA78:51894
TI HUMAN **SKIN GRAFTS** ON NUDE **ATHYMIC MICE** A LIGHT MICROSCOPIC STEREOLOGICAL STUDY.
AU BRUENGGER A; HEILBRONNER R; ANDEREGG M; HUBLER M; ROHR H P
CS INST. PATHOL., SCHOENBEINSTRASSE 40, UNIV. BASEL, CH-4056 BASEL, SCHWITZERLAND.
SO ARCH DERMATOL RES, (1984) 276 (2), 78-81.
CODEN: ADREDL. ISSN: 0340-3696.
FS BA; OLD
LA English

=> d 6 ab

L9 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2000 BIOSIS
AB A morphometric procedure is presented, which allows quantitative information to be obtained from the epidermis at the light microscope level. The application of this procedure to human skin grafted to the nude mouse revealed acanthosis of the grafted epidermis compared to the original donor skin. All epidermal layers were thicker, but the increase in the granular layer was especially marked. The ratio of the basement membrane surface to the epithelial surface showed no significant change. A possible explanation for the acanthosis of the graft might be the higher mechanical stress on the nude mouse compared to the original site on the abdomen. This adaptation of the grafted epidermis does not limit the usefulness of this **animal model** for dermatological research, when it is assessed by objective methods, allowing statistical comparison as described here.

a synthetic wound dressing, consisting of silicone membrane bonded to one surface of the nylon mesh. Another is composed of **fibroblasts** grown on the synthetic biodegradable matrix, polyglactin mesh. Kuroyanagi developed "cultured dermal replacement" in which **fibroblasts** cultured on the spongy collagen matrix. Allogeneic cultured epithelium, prepd. by the technique of Rheinwald and Green, has proven very effective in the management of split-thickness **skin** defects. Hansbrough et al. developed "cultured epidermal replacement" in which keratinocytes cultured to single-layer confluence on Hydroderm.RTM., a synthetic wound dressing, consisting of hydrophilic polyurethane membrane. These allogenic living **skin** replacements, i.e., cultured dermal and epidermal replacements, are expected to be more widely used. These function as "biol. wound dressing", since incorporated cells are able to release biol. active substances such as cytokines.

=> d l5 35 bib

L5 ANSWER 35 OF 36 CAPLUS COPYRIGHT 2000 ACS
AN 1997:294124 CAPLUS
DN 127:9003
TI Artificial **skin** composed of cultured cells and matrix
AU Kuroyanagi, Yoshimitsu
CS Sch. Med., Kitasato Univ., Sagamihara, 228, Japan
SO Nessho (1997), 23(1), 9-27
CODEN: NESHEG; ISSN: 0285-113X
PB Nippon Nessho Gakkai
DT Journal; General Review
LA Japanese

L5 ANSWER 35 OF 36 CAPLUS COPYRIGHT 2000 ACS

AB A review with 220 refs. **Tissue engineering** is moving rapidly from the fundamental research to the com. applications. A no. of cultured **skin** replacements have been produced by in vitro culture techniques. These techniques promise a new approach to the repair and reconstruction of tissues damaged by burn injury, mech. injury, and pressure sore. The 1st product, which have moved the **tissue engineering** potential to the com. applications, is "cultured epithelium". The pioneering work of Rheinwald and Green has demonstrated that it is possible to grow epidermal keratinocytes as stratified sheets from single cell suspension, and the resulting multilayered sheets grown in this manner have proven very effective in the management of full-thickness burns. In this regard, Compton has reported that a mature **skin** has regenerated from cultured epithelium autografts 5 yr after transplantation. Cuono has reported on an effective cultured epithelium autograft. In this method, cryopreserved allogeneic **skin** is grafted and the allogeneic **epidermis** is later mech. removed, and remaining allogeneic **dermis** is overgrafted with cultured epithelium autografts. This suggests that the dermal components play an important role in completing **skin** regeneration. In parallel with the acceptable concept on the need for dermal components, several types of bilayered **skin** replacements, consisting of both an epidermal and a dermal component, have been developed. This approach has been explored using the reconstructed dermal components, overlaid by autologous cultured keratinocytes. These dermal components are composed of autologous or allogeneic **fibroblasts** combined with a collagen gel or a spongy collagen-based matrix. Bell et al developed "living **skin** equiv." which is composed of a collagen gel with **fibroblasts**, overlaid by keratinocytes. Boyce and Hansbrough developed "composite **skin** substitute" which is composed of a collagen/GAG matrix with **fibroblasts**, overlaid by keratinocytes. Kuroyanagi et al. and Maruguchi et al. also developed "composite **skin** substitute" composed of spongy collagen matrix with **fibroblasts**, overlaid by keratinocytes. These bilayered **skin** replacements are designed to function as a permanent coverage on full-thickness **skin** defects. Early surgical wound excision in patients with extensive burns has been a major advance in burn care, and rapidity of wound closure has been shown to correlate with ultimate survival of the patient. The engraftment with cadaver **skin** has been used traditionally as a "gold std." technique. However, there are problems with supply, preservation, immune rejection, and potential infection transmission accompanying with the use of allograft **skin**. This situation underscores the need for effective alternative temporary **skin** replacements. The successful grafting of cells across major histocompatibility barriers suggests that grafted cells are either nonimmunogenic or so weakly immunogenic that immunol. rejection could not be detected clin. Keratinocytes and **fibroblasts** do not constitutively express class II antigens. These cells may lack the antigenicity necessary to elicit an immune response. They would therefore be feasible for allograft use. On the basis of this concept, allogeneic "cultured dermal replacement" has been developed. Hansbrough et al. developed 2 types of "living **skin** replacement". One is composed of **fibroblasts** grown on the nylon mesh surface of Biobrane.RTM.,

L5 ANSWER 33 OF 36 CAPLUS COPYRIGHT 2000 ACS

AB A no. of cultured **skin** replacements have been produced by in vitro culture techniques. The first product, which has moved the **tissue engineering** potential to the com. application, is "autologous cultured epithelium.". The authors developed an autologous cultured **skin** composed of spongy collagen matrix with **fibroblasts**, overlaid by keratinocytes. This bilayered **skin** replacement was designed to function as a permanent coverage on full-thickness **skin** defects. This type of cultured **skin** needs a culturing period more than 4 wk, since the cultivation of **fibroblasts** takes a longer period compared with that of keratinocytes. The authors also developed allogeneic cultured dermal substitute (CDS) which was comprised of **fibroblasts** combined with a spongy collagen matrix. The cryopreserved CDS has been proven to function as a biol. dressing, esp. promoting epithelialization and granulation tissue formation. On the basis of these findings, the present study is focused on the development of new cultured **skin** (K-CDS), which is a cryopreserved allogeneic CDS, overlaid by autologous keratinocytes. In this study, K-CDS was prepd. in two successive processes, i.e., prepg. the cryopreserved CDS using cultured **fibroblasts** derived from patient 1, followed by plating cultured keratinocytes derived from patient 2, in which the surface seeded with **fibroblasts** was overlaid with keratinocytes. In practice, this K-CDS was turned upside-down and applied to a full-thickness **skin** defect on athymic mouse, and thereby monolayered keratinocytes could directly attach on the wound surface. The matrix of K-CDS, i.e., cryopreserved CDS is able to function as a biol. wound dressing for monolayered keratinocytes. In this animal test, monolayered keratinocytes appeared to proliferate and differentiate on the wound surface, achieving 47% of "take.". This finding suggests that this technique is able to supply autologous keratinocytes on a wound surface successfully within a short culturing period.

=> d l5 33 bib

L5 ANSWER 33 OF 36 CAPLUS COPYRIGHT 2000 ACS

AN 1998:538714 CAPLUS

DN 129:293850

TI New type of cultured **skin**: transplantation study in animal test

AU Sato, Akio; Kuroyanagi, Yoshimitu

CS Dep. Plastic Reconstructive Surgery, School of Med., Kitasato Univ., Sagamihara, 228-8555, Japan

SO Seitai Zairyo (1998), 16(3), 152-159
CODEN: SEZAEH; ISSN: 0910-304X

PB Nippon Baiomateriaru Gakkai

DT Journal

LA Japanese

L5 ANSWER 29 OF 36 CAPLUS COPYRIGHT 2000 ACS
AB An in vitro human **skin** equiv. may be obtained by culturing human keratinocytes on a collagen gel contg. **fibroblasts**. The anchored **skin** equiv. cultured at the air-liq. interface closely resembles human **skin** and is acceptable for in vitro percutaneous absorption. However, it is still more permeable than human **skin** . Since intercellular lipids have been recognized to play an important role in **skin** permeability, IR spectroscopy and differential scanning calorimetry were performed on the stratum corneum of bovine or human **skin** equiv. grown at different days of air-liq. culture. The sym. and asym. CH2 stretching vibrations suggested that for all days obsd., the intercellular lipids were less organized than those in human **skin**, irresp. of whether bovine or human collagen was used. Different culture conditions were also tested and the medium without serum and no epidermal growth factor at the air-liq. culture showed results significantly more comparable to human **skin**. Actually, the thermal behavior of in vitro stratum corneum showed transitions at lower temps. than human **skin**. The transition around 80.degree.C, in the form of a lipid-protein complex, was absent. These results showed that the structural arrangement of intercellular lipids and their thermodn. properties hold a crucial role in the barrier function of the stratum corneum.

=> d l5 29 bib

L5 ANSWER 29 OF 36 CAPLUS COPYRIGHT 2000 ACS
AN 1999:521757 CAPLUS
DN 131:320654
TI Physical characterization of the stratum corneum of an in vitro human **skin** equivalent produced by **tissue engineering** and its comparison with normal human **skin** by ATR-FTIR spectroscopy and thermal analysis (DSC)
AU Pouliot, R.; Germain, L.; Auger, F. A.; Tremblay, N.; Juhasz, J.
CS Faculte de Pharmacie, Universite Laval, Sainte-Foy, PQ, Can.
SO Biochim. Biophys. Acta (1999), 1439(3), 341-352
CODEN: BBACAQ; ISSN: 0006-3002
PB Elsevier Science B.V.
DT Journal
LA English
RE.CNT 37
RE
(1) Asher, I; Biochim Biophys Acta 1977, V468, P63 CAPLUS
(4) Bell, E; Toxicol in Vitro 1991, V5, P591 CAPLUS
(7) Bouwstra, J; J Lip Res 1996, V37, P999 CAPLUS
(8) Casal, H; Biochim Biophys Acta 1984, V779, P381 CAPLUS
(10) Clancy, M; Int J Pharmacol 1994, V105, P47 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 1 OF 1 MEDLINE
AN 2000064694 MEDLINE
DN 20064694
TI Gene-enhanced **tissue engineering**: applications for wound healing using cultured dermal **fibroblasts** transduced retrovirally with the **PDGF**-B gene.
AU Breitbart A S; Mason J M; Urmacher C; Barcia M; Grant R T; Pergolizzi R G;
Grande D A
CS Department of Research, North Shore University Hospital-New York University School of Medicine, Manhasset, USA.
SO ANNALS OF PLASTIC SURGERY, (1999 Dec) 43 (6) 632-9.
Journal code: 5VB. ISSN: 0148-7043.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200003
EW 20000302

=> d ab

L6 ANSWER 1 OF 1 MEDLINE
AB The treatment of difficult wounds remains a considerable clinical challenge. The goal of this study was to determine whether genetic augmentation of dermal cells on resorbable matrices can stimulate the healing process, leading to increased tissue repair in a rat full-thickness excisional wound repair model. The human platelet-derived growth factor B (**PDGF**-B) gene was the initial gene chosen to test this hypothesis. The human **PDGF**-B gene was obtained from human umbilical vein endothelial cells (HUVEC) by reverse transcriptase-polymerase chain reaction, cloned into retroviral vectors under control of either the cytomegalovirus promoter or the rat beta-actin promoter, and introduced into primary rat dermal cells. In vitro results demonstrate that rat dermal cells are transduced and selected readily using retroviral vectors, and engineered to secrete **PDGF**-B at a steady-state level of approximately 2 ng per milliliter culture per 1 million cells per 24 hours. Seeding of the gene-modified cells onto polyglycolic acid (PGA) scaffold matrices and introduction into the rat model resulted in substantially increased fibroblast hypercellularity over control wounds at both 7 and 14 days posttreatment. Our results demonstrate that gene augmentation of rat dermal **fibroblasts** with the **PDGF**-B gene introduced into this animal model via PGA matrices modulates wound healing and suggests that experimentation with additional genes for use separately or in combination with **PDGF**-B for additional, improved wound healing is warranted.